

## WHAT IS CLAIMED IS:

1. A color-separating and -recombining optical system comprising at least one prism assembly made up of at least two prisms bonded to each other with a bonding layer formed between the prisms, thickness of the bonding layer being varied depending on a length of each optical path of color light components incident into the optical system and reaching the bonding layer via one of the prisms.
2. The color-separating and -recombining optical system according to claim 1, wherein a difference in refractive index between the prisms and the bonding layer is 0.1 or larger.
3. The color-separating and -recombining optical system according to claim 2, wherein the difference in refractive index is 0.3 or larger.
4. A color-separating and -recombining optical system provided between a light source and a projection lens in a projection display, having at least one prism assembly made up of at least two prisms bonded to each other with a bonding layer formed between the prisms, a white light emitted from the light source being divided into red-, green-, and blue-color light components related to primary colors, the light components being modulated by spatial light modulators in accordance with a video signal, the modulated light components being combined and projected onto a screen via the projection lens, thickness of the bonding layer being varied as thin and thick for optical paths long and short, respectively, from the spatial light modulators to the bonding layer which each modulated light component emitted from the corresponding spatial light

modulator reaches.

5. The color-separating and -recombining optical system according to claim 4 comprising a plurality of prism assemblies each made up of at least two prisms bonded to each other with a bonding layer formed between the prisms, thickness of the bonding layer of one of the prism assemblies, provided as closest to the projection lens in relation to other prism assemblies, being varied as thin and thick for optical paths long and short, respectively, from the spatial light modulators to the bonding layer which each modulated light component emitted from the corresponding spatial light modulator reaches.

6. The color-separating and -recombining optical system according to claim 4, wherein a difference in refractive index between the prisms and the bonding layer is 0.1 or larger.

7. The color-separating and -recombining optical system according to claim 6, wherein the difference in refractive index is 0.3 or larger.

8. A projection display comprising:

- a light source for emitting a white light;

- a polarization plate, specific linearly-polarized lights of red-, green-, and blue-color light components related to primary colors of the white light only passing through the polarization plate;

- a color-separating and -recombining optical system having first to fourth optical components having polarization-splitting planes intersecting each other like a character-"X", wavelength-selective polarizing converters for rotating the plane of polarization of the red-, green-, and blue-color light components by 90 degrees, one of the

converters being placed at a light-incident side of the first optical component, another of the converters being placed at a light-emitting side of the fourth optical component, the first and the fourth optical components being provided at a light-incident side and a light-emitting side, respectively, of the optical system, the first and the fourth optical components being arranged as diagonally opposing each other, and the remaining converters being placed between at least two inner facing planes of the first to the fourth optical components;

first, second and third spatial light modulators, the first modulator being provided in front of a light-emitting side of the second optical component, the second and third modulators being provided in front of light-emitting sides of the third optical component; and

a projection lens provided at the light-emitting side of the optical system, via which an output light beam from the optical system is projected onto a screen,

wherein at least the fourth optical component provided at the light-emitting side of the optical system is a prism assembly made up of at least two prisms bonded to each other with a bonding layer formed between the prisms, thickness of the bonding layer being varied as thin and thick for optical paths long and short, respectively, from the spatial light modulators to the bonding layer which each modulated light component emitted from the corresponding spatial light modulator reaches.

9. The projection display according to claim 8, wherein at least one of the first, the second and the third optical components is a prism assembly made up of at least two prisms bonded to each other with a bonding layer formed between the prisms, thickness of the bonding layer being varied as thin and thick for optical paths long and short, respectively, from the

spatial light modulators to the bonding layer which each modulated light component emitted from the corresponding spatial light modulator reaches.

10. The projection display according to claim 8, wherein a difference in refractive index between the prisms and the bonding layer is 0.1 or larger.

11. The color-separating and -recombining optical system according to claim 10, wherein the difference in refractive index is 0.3 or larger.

12. The projection display according to claim 8, wherein the spatial light modulators are reflective spatial light modulators.

13. The projection display according to claim 8, wherein the prisms are dichroic prisms.

14. The projection display according to claim 8, wherein the optical components are polarization beam splitters.

15. The projection display according to claim 8, wherein at least two of the optical components are a polarization beam splitter and a dichroic prism.